

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. - 10. (Cancelled).

11. (Currently amended) A method of preparing a cross-linked hydrogel by graft polymerization, comprising the steps of:

(1) preparing an aqueous solution having at least one saturated hydrophilic polymer, a cross-linking agent, and a water soluble peroxydisulphate photoinitiator ~~having a water soluble peroxydisulphate~~; and

(2) subjecting the aqueous solution to irradiation; and

(3) allowing the hydrogel to cure in the form of a sheet or coating having a thickness between about 200 um to about 2 cm;

wherein the cross linking agent acts as a co-catalyst for a cross-linking reaction the concentration of the peroxydisulphate in the solution is between about 0.1 wt % to 1.25 wt % and complete curing time for the hydrogel is less than about 5 minutes.

12. (Previously presented) The method of claim 11, wherein the aqueous solution comprises at least two saturated hydrophilic polymers.

13. (Currently amended) The method of claim 11, wherein the water soluble peroxydisulphate is selected from the group consisting of sodium peroxydisulphate, potassium peroxydisulphate, and ammonium peroxydisulphate.

14. (Previously presented) The method of claim 11, wherein the aqueous solution further comprises at least one co-initiator selected from the group consisting of multivalent transition metal ions.

15. (Previously presented) The method of claim 11, wherein the hydrophilic polymer is selected from the group consisting of cellulose derivatives, polysaccharides, polyvinyl pyrrolidone, polyvinyl alcohol, polyacrylic acid, poly(methyl vinyl ether/maleic anhydride), poly(meth)acrylic acid, polyethylene glycol, or copolymers or blends of the foregoing.

16. (Previously presented) The method of claim 11, wherein the hydrophilic polymer comprises poly-vinyl pyrrolidone or copolymers of polyvinyl pyrrolidone.

17. (Previously presented) The method of claim 11, wherein the cross-linking agent is selected from the group consisting of vinylic or unsaturated macromers or monomers.

18. (Previously presented) The method of claim 17, wherein the cross-linking agent is selected from the group consisting of mono-/di- or multifunctional acrylates or methacrylates.

19. (Previously presented) The method of claim 11, wherein the aqueous solution further comprises one or more plasticizers.

20. (Previously presented) The method of claim 11, wherein the cross-linked hydrogel is in the form of a sheet.

21. (Currently amended) A composition for the preparation of a cross-linked hydrogel by photopolymerization, the composition comprising at least one saturated hydrophilic polymer, a cross-linking agent, and a water soluble peroxydisulphate photoinitiator having a concentration of between about 0.1 wt % to 1.25 wt % ~~having a water soluble peroxydisulphate.~~

22. (Previously presented) The composition according to claim 21, wherein the composition comprises at least two saturated hydrophilic polymers.

23. (Previously presented) A cross-linked hydrogel prepared by the method according to claim 11.

24. (New) A method of preparing a cross-linked hydrogel by graft polymerization, comprising the steps of:

(1) preparing an aqueous solution having at least one saturated hydrophilic polymer, a cross-linking agent, and a water soluble peroxydisulphate photoinitiator;

(2) subjecting the aqueous solution to irradiation; and

(3) allowing the hydrogel to cure in the form of a sheet or coating having a thickness between about 10 μm to about 200 μm ;

wherein the concentration of the peroxydisulphate in the solution is between about 0.1 wt % to 1.25 wt % and complete curing time for the hydrogel is less than about 5 minutes.